stages of inquiry ; and these general phenomena at length conducted Young and Fresnel to the establishment (it is supposed) of the undulatory theory. They did so, because they resulted from the operation of the cause to the discovery of which they thus led. And let it be observed, that this cause implies the adjustment of the undulations and the ethereal fluid in which they take place. Some move iaster than others; and the more rapid, in overtaking the others, produce, it is supposed, what are called *interference.* Then these vibrations, in order to produce the actual results, must be transverse vibrations. All these are skilful adjustments,, without which the end could not be accomplished—the production of vision. Hence the need of clear and comprehensive ideas of force and motion and place on the part of all who would prosecute this science; and this, not as Whewell would say, because every discovery consists in the application of a correlative idea to existing facts, but because the facts have a peculiar relation in-respect of space and time and force, which it is the business of the observer to display, and of the philosopher to resolve into Its cause.

In the sciences not mechanical* such as chemistry, laws of phenomena must all proceed from a similar adjustment of substances to each other in regard to their quantity and their properties. It is always to be borne in mind, that the laws which come under our notice in chemistry are those of chemical affinity, and not of mechanical force. All existing compound bodies result from the adjustment of the particles of matter, in respect of their rules of elective affinity. As all actiial phenomena are complex, the resolution of them into their elements requires steady apprehensions of that on which their present nature depends, and in particular on the laws of elective affinity and on quantity, (which is measured by weight;) and this, not because laws of phenomena are ideas superinduced upon facts, but because they are the result of the relations which the facts bear one to another.

SECT. IT.—WISDOM DISPLAYED IN THE PBBVALENCE OF GENERAL LAWS AND OBSEBVABLE OBDEE IN THE WORLD.

All the material objects on our earth seem to be composed of rather more than sixty elements. We think that we can discover the wisdom of God in creating, as the elements out of which existing things are formed, substances sufficiently numerous to produce variety, but not so numerous as to create confusion. The human mind is so formed, that it delights in mingled sameness and diversity; and we are furnished with as much variety as the finite capacity of man can observe, in the

unnumbered com-
pounds formed out of the simple ingredients;
while, on the
other hand, the mind is kept from bewilderment
by its being
enabled constantly to fall back upon comparatively
few principles,
In the actually existing forms and colours, the
diversified pro-
perties and incessant changes of the physical
world, we have
sufficient variety and novelty to interest the
curiosity and delight
the imagination ; wo have flowers of every shape
and hue, lovely
landscapes of every diversified extent and
character, and the e>;~